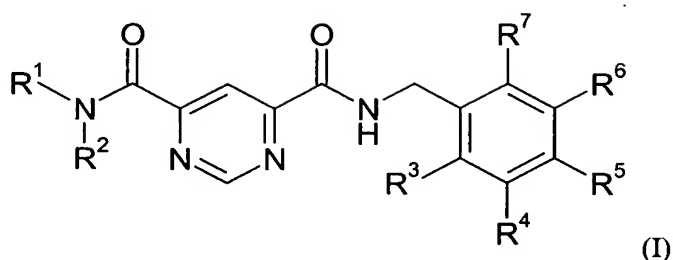


What is claimed is:

1. A compound of formula I



wherein

R¹ is

10. hydrogen atom or $-(C_1-C_6)$ -alkyl,

R² is

15. $-(C_1-C_6)$ -alkyl that is substituted, once, twice or three times, by
 $-C(O)-O-R^8$,
 $-(C_1-C_6)$ -alkyl- $O-R^8$,
 $-(C_6-C_{14})$ -aryl that is substituted, once, twice or three times, independently
of each other, by R¹¹ or
Het that is a saturated or unsaturated monocyclic or bicyclic, 3- to 10-
membered heterocyclic ring system which contains 1, 2 or 3
identical or different ring heteroatoms selected from the group
consisting of nitrogen, oxygen and sulfur and is unsubstituted or
substituted, once or more than once, by R¹³,

R³, R⁴, R⁵, R⁶ and R⁷ are identical or different and are, independently of each other,

25. hydrogen
halogen,
 $-(C_1-C_6)$ -alkyl, in which alkyl is unsubstituted or substituted, once, twice or three
times, by halogen,
 $-O-(C_1-C_6)$ -alkyl, in which alkyl is unsubstituted or substituted, once, twice or
three times, by halogen, or
 $-S-(C_1-C_6)$ -alkyl,

R⁸ is

hydrogen atom, or
 -(C₁-C₆)-alkyl,

5

R¹¹ is

-(C₂-C₆)-alkyl-C(O)-O-R⁸,
 -O-(C₁-C₆)-alkyl-C(O)-O-R⁸,
 -NR¹⁴R¹⁵,
 10 -(CH₂)_k-NR⁹R¹⁰,
 -O-(C₂-C₆)-alkyl-NR⁹R¹⁰, or
 -NR⁸-C(O)-(C₁-C₆)-alkyl, in which alkyl is unsubstituted or substituted, once,
 twice or three times, by R¹²,

15 R⁹ and R¹⁰ are identical or different and are, independently of each other,

hydrogen atom, or
 -(C₁-C₆)-alkyl, or
 taken together with the nitrogen atom to which they are attached form a 5-, 6- or
 7-membered saturated azaheterocyclyl ring wherein one or two further carbon
 20 atoms thereof are optionally replaced by a heteroatom that is an oxygen, sulfur or
 nitrogen atom, and wherein the nitrogen atom is optionally unsubstituted or
 substituted by (C₁-C₆)-alkyl,

k is

25

2, 3, 4 or 5,

R¹² is

halogen,
 cyano,
 30 nitro,
 hydroxyl,
 amino,
 -C(O)-O-(C₁-C₆)-alkyl, or
 -C(O)-OH,

35

R¹³ is

- halogen,
- cyano,
- nitro,
- 5 hydroxyl,
- amino,
- C(O)-O-(C₁-C₆)-alkyl,
- C(O)-OH,
- 10 -(C₁-C₆)-alkyl that is unsubstituted or substituted, once, twice or three times, by
- halogen,
- O-(C₁-C₆)-alkyl, where alkyl is unsubstituted or substituted, once, twice or three
- times, by halogen,
- pyridyl, or
- phenyl that is unsubstituted or substituted, once or more than once and
- 15 independently of each other, by a radical from the series halogen, (C₁-C₆)-
- alkoxy and (C₁-C₆)-alkyl, and

R¹⁴ and R¹⁵ together with the nitrogen atom to which they are attached form

- 20 a 5-, 6- or 7-membered saturated azaheterocyclyl ring wherein one or two further
- carbon atoms thereof are optionally replaced by a heteroatom that is oxygen,
- sulfur or nitrogen, and wherein each nitrogen atom thereof is optionally
- independently unsubstituted or substituted by (C₁-C₆)-alkyl, or

- 25 stereoisomer thereof, a mixture of stereoisomers thereof in any ratio, or physiologically
- tolerable salt thereof.

2. The compound according to claim 1, wherein

R² is

- 30 -(C₁-C₄)-alkyl, where alkyl is substituted, once, twice or three times, by
- C(O)-O-R⁸,
- (C₁-C₄)-alkyl-O-R⁸,
- phenyl that is substituted, once, twice or three times, independently of
- each other, by R¹¹, or
- Het that is azepine, azetidine, aziridine, benzimidazole, benzo[1,4]dioxin,
- 35 1,3-benzodioxole, benzofuran, 4H-benzo[1,4]oxazine,

benzoxazole, benzothiazole, benzothiophene, quinazoline,
 quinoline, quinoxaline, chroman, cinnoline, oxirane,
 1,2-diazepine, 1,3-diazepine, 1,4-diazepine, 1,4-dioxin, dioxole,
 furan, imidazole, indazole, indole, isoquinoline, isochroman,
 5 isoindole, isoxazole, isothiazole, 1,2-oxazine, 1,3-oxazine,
 1,4-oxazine, oxazole, phthalazine, piperidine, pyran, pyrazine,
 pyrazole, pyridazine, pyridine, pyrimidine, pyridoimidazole,
 pyridopyridine, pyridopyrimidine, pyrrol, tetrazole, 1,2-thiazine,
 1,3-thiazine, 1,4-thiazine, thiazole, thiophene, thiopyran,
 10 1,2,3-triazine, 1,2,4-triazine, 1,3,5-triazine, 1,2,3-triazole or 1,2,4-
 triazole, and Het is unsubstituted or substituted, once, twice or
 three times, independently of each other, by R¹³

R³, R⁴, R⁵, R⁶ and R⁷ are identical or different and are
 15 hydrogen atom,
 halogen,
 -(C₁-C₆)-alkyl, in which alkyl is unsubstituted or substituted, once, twice or three
 times, by halogen, or
 -O-(C₁-C₆)-alkyl, in which alkyl is unsubstituted or substituted, once, twice or
 20 three times, by halogen,

R⁸ is
 hydrogen atom, or
 -(C₁-C₄)-alkyl,

25 R¹¹ is
 -(C₂-C₄)-alkyl-C(O)-O-R⁸,
 -O-(C₁-C₄)-alkyl-C(O)-O-R⁸,
 -N R¹⁴R¹⁵, wherein R¹⁴ and R¹⁵ taken together with the nitrogen atom to which
 30 they are attached form imidazolidine, isothiazolidine, isoxazolidine,
 morpholine, piperazine, piperidine, pyrazine, pyrazolidine, pyrrolidine,
 tetrazine or thiomorpholine, and wherein each nitrogen atom thereof is
 optionally independently unsubstituted or substituted by (C₁-C₄)-alkyl,
 -(CH₂)_k-N R⁹R¹⁰,
 35 -O-(C₂-C₄)-alkyl-NR⁹R¹⁰, or

-NH-C(O)-(C₁-C₄)-alkyl, wherein the alkyl is unsubstituted or substituted, once, twice or three times, by R¹²,

R⁹ and R¹⁰ are identical or different and are, independently of each other,

5 hydrogen atom, or
 -(C₁-C₄)-alkyl, or
 taken together with the nitrogen atom to which they are attached form
 imidazolidine, isothiazolidine, isoxazolidine, morpholine, piperazine, piperidine,
 pyrazine, pyrazolidine, pyrrolidine, tetrazine or thiomorpholine, and wherein the
10 nitrogen atom is optionally unsubstituted or substituted by -(C₁-C₄)-alkyl,

k is

2, 3 or 4, and

15 R¹³ is

 halogen,
 amino,
 -C(O)-O-(C₁-C₄)-alkyl,
 -C(O)-OH,
20 -(C₁-C₆)-alkyl that is unsubstituted or substituted, once, twice or three times, by
 halogen,
 -O-(C₁-C₆)-alkyl, wherein the alkyl is unsubstituted or substituted, once, twice or
 three times, by halogen,
 pyridyl, or
25 phenyl that is unsubstituted or substituted, once or more than once and
 independently of each other, by a radical from the series halogen,
 -(C₁-C₄)-alkoxy and -(C₁-C₄)-alkyl.

3. The compound according to claim 1, wherein

30 R¹ is

hydrogen,

R² is

-(C₁-C₂)-alkyl that is substituted, once, twice or three times, by

phenyl that is substituted, once, twice or three times, independently of each other, by R^{11} , or

Het that is furan, imidazole, isothiazole, isoxazole, oxazole, pyrazole, pyridazine, pyridine, pyrimidine, pyrrole, thiazole, thiophene, 1,2,3-triazole or 1,2,4-triazole, and Het is unsubstituted or substituted, once, twice or three times, independently of each other, by R^{13} ,

R^3 , R^4 , R^5 , R^6 and R^7 are identical or different and are, independently of each other,

hydrogen,
halogen,
methyl,
trifluoromethyl,
methoxy, or
trifluoromethoxy,

R^8 is

hydrogen atom, or
 $-(C_1-C_4)$ -alkyl,

R^{11} is

$-(C_2-C_4)$ -alkyl-C(O)-O- R^8 ,
 $-O-(C_1-C_4)$ -alkyl-C(O)-O- R^8 ,
 $-N R^{14} R^{15}$, wherein R^{14} and R^{15} taken together with the nitrogen atom to which they are attached form imidazolidine, isothiazolidine, isoxazolidine, morpholine, piperazine, piperidine, pyrazine, pyrazolidine, pyrrolidine, tetrazine or thiomorpholine, and wherein each nitrogen atom thereof is optionally independently unsubstituted or substituted by (C_1-C_4) -alkyl,
 $-(CH_2)_k-N R^9 R^{10}$,
 $-O-(C_2-C_4)$ -alkyl-N $R^9 R^{10}$, or
 $-NH-C(O)-(C_1-C_4)$ -alkyl, wherein the alkyl is unsubstituted or substituted, once, twice or three times, by R^{12} ,

R^9 and R^{10} are identical or different and are, independently of each other,

hydrogen atom, or

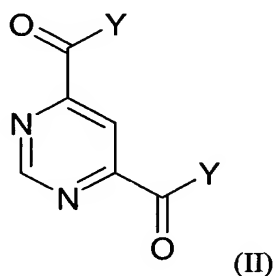
- 5 -(C₁-C₄)-alkyl, or
 taken together with the nitrogen atom to which they are attached form
 imidazolidine, isothiazolidine, isoxazolidine, morpholine, piperazine, piperidine,
 pyrazine, pyrazolidine, pyrrolidine, tetrazine or thiomorpholine, and wherein the
 nitrogen atom is optionally unsubstituted or substituted by -(C₁-C₄)-alkyl,
- k is
- 2, 3 or 4,
- 10 R¹² is
- halogen,
 -C(O)-O-(C₁-C₄)-alkyl, or
 -C(O)-OH, and
- 15 R¹³ is
- halogen,
 amino,
 -C(O)-O-(C₁-C₄)-alkyl,
 -C(O)-OH,
- 20 -(C₁-C₄)-alkyl that is unsubstituted or substituted, once, twice or three times, by
 halogen,
 -O-(C₁-C₄)-alkyl, wherein the alkyl is unsubstituted or substituted, once, twice or
 three times, by halogen,
 pyridyl, or
- 25 phenyl that is unsubstituted or substituted, once or more than once and
 independently of each other, by a radical from the series halogen,
 -(C₁-C₄)-alkoxy and -(C₁-C₄)-alkyl.
- 30 4. A method for the prophylaxis or therapy of a patient having or subject to a disease
 whose course involves a detrimental increase in the activity of matrix
 metalloproteinase 13, comprising administering to said patient a therapeutically
 effective amount of a compound according to claim 1.
- 35 5. A method for the prophylaxis or therapy of a patient having or subject to a disease
 whose course involves a detrimental increase in the activity of matrix

metalloproteinase 13, comprising administering to said patient a therapeutically effective amount of a compound according to claim 2.

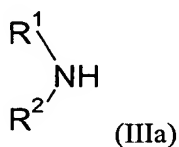
6. A method for the prophylaxis or therapy of a patient having or subject to a disease whose course involves a detrimental increase in the activity of matrix metalloproteinase 13, comprising administering to said patient a therapeutically effective amount of a compound according to claim 3.

7. A process for preparing the compound of formula I according to claim 1, comprising

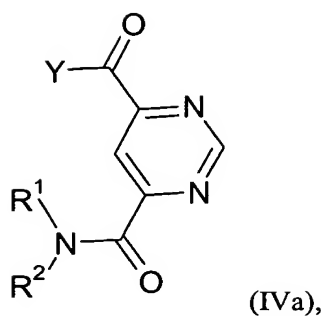
a) reacting a compound of formula II



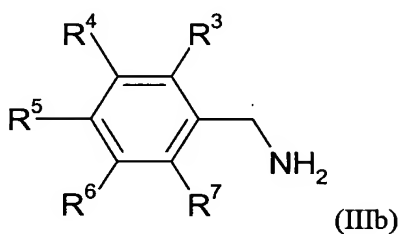
- wherein Y is
halogen, hydroxyl or C₁-C₄-alkoxy, or forms, together with the carbonyl group, an active ester or a mixed anhydride,
with a compound of formula IIIa



wherein R¹ and R², have the meanings given in the compound of formula I, to form a compound of formula IVa

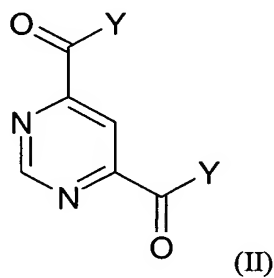


- b) reacting the compound of formula IVa with a compound of formula IIIb



wherein R³, R⁴, R⁵, R⁶ and R⁷ have the meanings given in the compound of formula I, to form the compound of formula I.

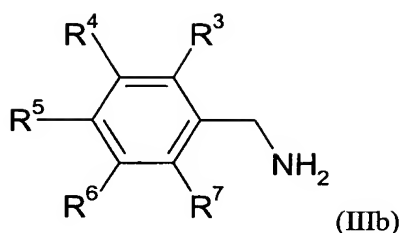
8. A process for preparing the compound of formula I according to claim 1, comprising
- a) reacting a compound of formula II



wherein Y is

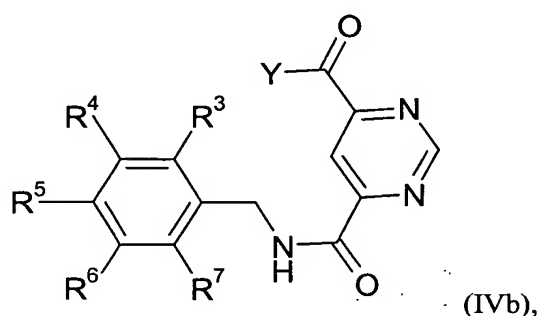
halogen, hydroxyl or C₁-C₄-alkoxy, or forms, together with the carbonyl group, an active ester or a mixed anhydride,

with a compound of formula IIIb



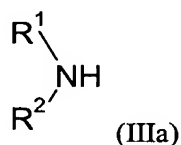
wherein R^3 , R^4 , R^5 , R^6 and R^7 have the meanings given in the compound of formula I,

5 to form a compound of formula IVb



b) reacting the compound of formula IVb with a compound of formula IIIa

10



wherein R^1 and R^2 , have the meanings given in the compound of formula I,
to form the compound of formula I.

15

9. A pharmaceutical preparation comprising a pharmaceutically effective amount of at least one compound of formula I according to claim 1 and a pharmaceutically suitable and physiologically tolerated carrier.

20

10. A use of the compound according to claim 1 for the prophylaxis or therapy of a patient having or subject to a disease that involves a detrimental increase in the activity of matrix metalloproteinase 13, comprising administering to the patient a pharmaceutically effective amount of at least one compound of formula I.

11. The use according to claim 10 wherein the disease is a degenerative joint disease, or disease of the connective tissue, chronic disease of the locomotory apparatus or cancer disease such as breast cancer.